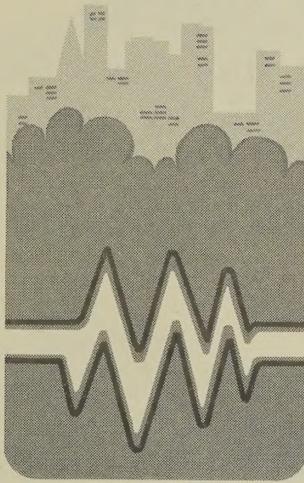


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# EARTHQUAKE PREPAREDNESS IDEAS FOR ACTION

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Highlights from ABAG's General Assembly  
February 11 and 12, 1976



## Association of Bay Area Governments

Hotel Claremont • Berkeley, California 94705 • (415) 841-9730

June 1, 1976

Dear Colleague:

The recent earthquake disasters in Guatemala and Italy cause us all to feel compassion for the victims and heighten our awareness of the Bay Area's vulnerability. New information concerning the Palmdale "bulge", and the California Seismic Safety Commission's resolution on this problem, stress the urgency of earthquake preparedness and recovery actions that should be taken by various levels of government.

The ABAG General Assembly, held February 11 & 12, 1976, had as its theme earthquake preparedness and response. Approximately 300 participants -- including local elected officials, staff members of Federal, State and local agencies, representatives of private industry and interested citizens -- identified a great number of recommendations for specific actions. It is the purpose of this booklet to summarize these recommendations for your information, and to outline what ABAG is doing in earthquake preparedness as a result of the conference.

Included with this booklet is a return postcard asking what your organization is doing as a result of the conference, and asking about your interest in participating in a series of small workshops on specific earthquake preparedness subjects in the future.

I look forward to receiving your comments on this critical matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Lenard E. Grote".

Lenard E. Grote, President  
Councilman, City of Pleasant Hill

# EARTHQUAKE PREPAREDNESS IDEAS FOR ACTION

Highlights from ABAG's General Assembly  
February 11 and 12, 1976

## Major issues from the conference

Conference participants identified a wide range of earthquake issues, including:

- Legislation -- the lack of existing legislation which:
  1. Deals adequately with the mitigation of earthquake losses, damage, and related problems;
  2. Provides funds for the study and research still needed in this area for public education, and to meet the costs of "getting ready".
- Political and Economic Implications -- the political and economic implications of earthquake prediction, including: insurance underwriting; effect on property values, mortgage availability, unemployment, sales and property tax revenues and local services; as well as the potential outmigration of residents.
- Institutional -- the responsibilities of different public agencies and governmental bodies, including interjurisdictional coordination, liabilities, and controls.
- Public Information -- the lack of awareness of the many things that can be done by citizens and governmental bodies to reduce the consequences of a major earthquake.
- Planning and Technical Assistance -- the need to develop methods to convert earthquake predictions into warning systems, the problem of mapping and identifying hazard areas, and the need to identify and improve existing hazardous structures.
- Technical Information -- the need to make public agencies and local governments aware of existing technical information which is available.
- Education -- the need to improve disaster preparedness and response procedures, including emergency medical service training.

- Emergency Communications -- the lack of "survivable" emergency communications systems, and/or backup systems to guarantee immediate emergency communications response.
- Review-- the need for consistent standards for assessing the adequacy of seismic safety elements, building codes and zoning ordinances.
- Enforcement -- the uneven enforcement of existing building codes and standards, including fire and seismic regulations.
- Studies and Research -- the lack of knowledge about earthquake prediction and about the behavior of soils, structures and people during earthquakes.

# IDEAS FOR ACTION

## **Recommendations from conference participants**

Recommendations from conference participants		Potential responsibilities		
		ABAG	Federal	State
				Local
<b>Technical assistance</b>				
1.	Delineate earthquake hazard zones for local governments.	X		X
2.	Develop hazard reduction programs and controls.		X	X
3.	Upgrade local seismic safety programs.			X
4.	Act as a "certifying" agency for predictions.			X
5.	Develop a handbook on building planning and site design in relation to seismic problems.	X	X	X
6.	Provide better seismic information for decision-makers.	X	X	X
7.	Provide monitoring of the San Andreas fault and other faults.		X	X
8.	Provide data on the locations of surface faulting.	X	X	
9.	Install signs indicating dangerous seismic areas.			X
10.	Serve as a clearinghouse for available technical information.	X		X
11.	Develop broader and more consistent standards for public safety.	X	X	
12.	Improve the Uniform Building Code and other building codes.	X	X	X
13.	Enforce existing building codes through vigilance and education.		X	X
14.	Ensure that adequate fire and safety standards are observed.	X		X
15.	Develop interdisciplinary approaches to building planning and site design to ensure that both functional and structural failures are addressed, and to ensure that critical buildings can remain operational during and after earthquakes.	X	X	
16.	Develop techniques to reestablish property lines after ground movement.		X	X
17.	Develop detailed requirements for seismic safety elements of general plans.			X
18.	Develop techniques to upgrade existing structures to withstand major earthquakes.			X
19.	Develop techniques to ensure that significant new public structures withstand major earthquakes.			X
20.	Identify the location and the quantity of radioactive and other hazardous materials and their proximity to seismic faults.	X	X	X
21.	Identify the full costs of earthquake preparedness.	X	X	X
22.	Use predictive information to minimize panic and maximize safe response to potential earthquakes.			X
23.	Provide exhibits and presentations to local governments on how to apply available technical information.			X

## Recommendations

## Potential responsibilities

### Advocacy

1. Support legislation for earthquake prediction and response.
2. Support legislation to fund improvement and implementation of local seismic safety programs.
3. Support legislation to reestablish economic stability after earthquake disasters.
4. Support realistic funding to reduce earthquake hazards in existing buildings.
5. Support funding to make new buildings earthquake resistant.
6. Encourage the development of effective earthquake prediction methods.
7. Seek State funds to improve disaster response capabilities of local governments.

	ABAG	Federal	State	Local
1.	X			X
2.	X			X
3.	X			X
4.	X			X
5.	X			X
6.	X	X	X	X
7.	X			X

### Coordination

1. Coordinate required emergency services.
2. Coordinate priorities for post-earthquake repairs.
3. Coordinate planning to restore services: water, power, sewage, others.
4. Provide coordination between involved agencies, jurisdictions and the State Legislature.

X
X
X
X

### Planning

1. In making planning decisions and policies, include consideration of the costs and risks of building in hazardous areas.
2. Require geological assessments of proposed development sites.

X	X	X	X
			X

### Public information

1. Increase citizen and government awareness of disaster preparation techniques.
2. Provide continuing information and education programs.
3. Provide information on what to do during and after an earthquake.
4. Provide procedures for conveying earthquake predictions to the public and to determine what actions should be taken.

X	X	X	X
X		X	X
X		X	X
X		X	X
X	X		X

## Recommendations

## Potential responsibilities

	ABAG	Federal	State	Local
5. Provide information for medical self-help in the event of earthquake disaster.		X	X	
6. Develop means to get public officials involved with seismic safety issues.	X		X	
7. Provide more information on Federal and State laws concerning seismic safety and response.	X	X	X	
8. Provide public information concerning emergency equipment for the home -- such as food, water, batteries, and other supplies -- including mailings and expanded use of media.	X		X	X

## Studies and research

1. Conduct research into the behavior of buildings, soils and people during earthquakes.	X	X
2. Develop alternative earthquake mitigation techniques for use by local governments.	X	X
3. Identify jurisdictional responsibilities and liabilities for earthquake damage.	X	X
4. Identify means to deal with rebuilding issues including building sites, structural design and economics.	X	X
5. Study the political and economic impacts of earthquake predictions, including: earthquake insurance underwriting; reductions in property values; and reductions in real estate transactions, mortgage availability and in new construction, as well as in unemployment, sales and property tax revenues and local services, together with potential population outmigrations.	X	X
6. Studies of the Federal role as a "co-insurer" for earthquake insurance.	X	
7. Study means to provide psychological help for earthquake victims.	X	X

## Education

1. Special education for improvements to older homes and on mitigation measures for new homes.	X	X
2. Education for medical self-help in time of earthquake emergencies.	X	X
3. Education describing the nature and location of earthquake hazards.	X	X

## Potential responsibilities

### Recommendations

4. Provide posters and plastic information cards that describe the immediate steps to be taken in times of earthquake disasters, including personal safety precautions, emergency communication channels, emergency food and clothing requirements, location of shut-off switches for home utilities, emergency assembly points and other disaster response information.
5. Provide workshops for public officials, administrators and others on earthquake preparedness and response.
6. Disseminate information in coordination with local schools and PTAs in order to educate and prepare for earthquake response.
7. Develop an earthquake awareness program, possibly including a film and other material to increase local awareness of earthquake preparedness needs.
8. Keep the State Legislature informed about the level of protection in the Uniform Building Code.

ABAG	Federal	State	Local
X	X	X	
	X	X	X
		X	X
	X		X
	X	X	

### Review processes

1. Develop a review process for analyzing existing hazardous public structures.
2. Strengthen State guidelines, criteria and procedures for the review of local seismic safety programs.

X	X
	X

### Response capability

1. Develop emergency medical response systems which can adequately transport personnel to the field and victims to facilities.
2. Develop adequate emergency communications capabilities.
3. Adequately organize care for displaced persons.
4. Improve resources, including food, shelter and first aid.
5. Develop adequate rescue capabilities.

X	X	X
	X	X
	X	X
X	X	
X	X	

## Recommendations

## Potential responsibilities

6. Develop backup response capabilities (e.g., the use of C.B. radio operators as a mechanism for developing such backup). In addition, inter-jurisdictional response systems (e.g., city to county, and county to region) are also necessary. Funding for computer hardware, which will be a requirement for the implementation of such systems, will be necessary.
7. The State should inspect health care facilities to coordinate with the Office of Emergency Services' response plan. They should also look at hospital licensing requirements.

ABAG	Federal	State	Local
	X	X	

## Medical programs

1. Develop and support expanded and coordinated emergency medical service training to ensure adequate personnel and resources to respond to a disaster.
2. Develop and support Regional Emergency Medical Services to coordinate the fragmented services at State, regional and local levels.

X	X	X
X	X	X

## Implementation

1. Clarify emergency response roles and responsibilities of jurisdictions, agencies, elected officials, staffs and others at the local level.
2. Clarify the regulations of the Disaster Relief Act of 1974 -- particularly the potentials of the "Disaster Preparedness Program" (2205.05-.79) to focus on earthquake prediction planning and the procedures for Federal audits (2205.19).
3. Establish liaison with the Federal Disaster Assistance Administration in order to know the procedures for obtaining Federal Relief from this Act.
4. Require local governments to adopt emergency earthquake procedures.
5. Develop a system of earthquake response drills for local government officials and emergency staffs.

X	X
X	X
X	X

## Recommendations

## Potential responsibilities

	ABAG	Federal	State	Local
6. Clarify the relationship of the seismic safety element to other elements of the general plan.			X	
7. Require geological studies prior to the issuance of building permits in hazardous areas.		X		X
8. Require geotechnical investigations prior to subdivision as a way to reduce the cost of these investigations.		X		X
9. Develop economic incentives to encourage earthquake improvements to homes.	X	X		
10. Consider a system of penalties on buildings that are substandard from a seismic point of view.		X		X
11. Develop means to guarantee the effectiveness of earthquake insurance companies in meeting their liabilities in the event of a major disaster.				X
12. Implement local seismic safety elements by the following:		X		X
a. Modify land use and development regulations accordingly.		X		X
b. Require structural review and abatement.				
c. Update the disaster preparedness plan.				
d. Collect and disseminate available information.				
e. Keep abreast of new building codes and construction techniques for possible inclusion into the local building code.				

## **ABAG Action**

*At the conclusion of the two-day conference the ABAG General Assembly passed a resolution on earthquake preparedness and response which called for:*

1. *Making earthquake preparedness and response a high ABAG program priority.*
2. *Directing the Executive Board and staff to investigate what ABAG could and should do, in the field of earthquake preparedness and response, and to identify the resources necessary if ABAG were to involve itself in this kind of program.*
3. *Involving ABAG in matters of earthquake safety as they relate to:*
  - a. *Legislation and advocacy;*
  - b. *Planning and technical assistance;*
  - c. *Public information and education.*
4. *Directing the Executive Board to consider the report of ABAG's Civil Preparedness Technical Advisory Committee.*
5. *Directing the Executive Board to investigate the following specific types of action:*
  - a. *Providing technical assistance of an interdisciplinary nature to improve local seismic safety programs.*
  - b. *Strengthening State guidelines, criteria and procedures for the review of local seismic safety programs.*
  - c. *Advocating legislation to fund the improvement and especially the implementation of local seismic safety programs.*
  - d. *Approaching building design and site planning from an interdisciplinary point of view so that both functional and structural failure problems are addressed.*
  - e. *Seeking State funding to improve disaster response capability especially in the areas of emergency communications, emergency medical services, fire protection, utility systems, and relocation facilities.*

- f. Increasing citizen and governmental awareness of disaster preparedness concerns through continuing information and education programs.*
- g. Expanding the use of media for public service messages concerning hazard reduction and disaster preparedness.*
- h. Advocating legislation that will help reestablish economic stability in the aftermath of a catastrophic earthquake or other major disaster. Such legislation should address the fiscal solvency of local governments and the financial vulnerability of property owners. Methods such as Federally underwritten earthquake and similar hazards insurance should be considered.*
- i. Developing methodical, financially feasible and workable programs to reduce hazards.*
- j. Facilitating greater coordination of earthquake preparedness, response, and recovery programs.*
- k. Referring to the Legislation and Governmental Organization Committee for possible ABAG endorsement of the earthquake prediction and response legislation (S. 1174) proposed by U. S. Senator Alan Cranston and related bills by State Senator Alfred Alquist (SB 1216 and SB 1340).*

## **Next steps for ABAG**

*As a result of the earthquake conference, ABAG is doing the following:*

1. *ABAG has allocated over \$30,000 of its Fiscal Year 1976-77 Budget for earthquake preparedness and recovery work.*
2. *ABAG's 1976-77 Work Program for Earthquake Preparedness includes:*

### **Legislative advocacy**

- a. *Monitoring proposed earthquake related legislation; preparing comments as appropriate.*
- b. *Working with staffs of State legislative committees, advocating legislation that would assist local governments' preparedness efforts.*

### **Technical assistance to local governments**

- a. *Offering information and assistance to member governments in using previous ABAG work to upgrade and improve their seismic safety programs.*
- b. *Assisting local governments in using the findings and methods contained in the ABAG Land Capability Analysis Report to improve local seismic safety programs.*

### **Plan and project review**

- a. *Completing plan and project review procedures and policies on seismic safety.*
- b. *Conducting plan and project reviews, and preparing review comments in relation to seismic safety policies and programs.*

### **Legal research**

- a. *Cataloging legal research into responsibilities and liabilities of local jurisdictions for earthquake damage.*
3. *ABAG is reviewing earthquake preparedness legislation and has also supported continued DCPA funding to local governments for emergency preparedness programs. The ABAG Legislation and Governmental Organization Committee has endorsed Senator Alan Cranston's earthquake research and mitigation measure (S. 1174), and has supported SB 1216 (introduced by State Senator Alfred Alquist) that requires geologic as well as soils reports in specified California subdivisions. The*

Committee has opposed a bill (AB 3176) by Assemblyman Carmen Perino that would make permissive the existing requirement that California local government general plans include a seismic safety element and has supported SB 1340 by Senator Alquist (recently signed by Governor Brown) that extends the California Seismic Safety Commission until January 1, 1981.

4. ABAG is seeking funding from various sources to implement some of the recommendations developed at the conference. Specifically, the following potential programs are being investigated:

## **1 — Planning and coordination**

- 1.1 Use of the San Francisco Bay region as a demonstration area for developing methods to convert earthquake prediction into warning systems.
- 1.2 Identification of jurisdictional responsibilities and liabilities for earthquake damage (potential for a joint effort with a major university law school).
- 1.3 Identification of the roles and responsibilities of local and regional agencies in earthquake preparedness, prediction response, etc.
- 1.4 Translation of earthquake engineering research findings into tools and techniques for use by local governments, aimed primarily at reducing the vulnerability and hazardousness of large public and commercial structures (potential for a joint effort with a major university school of engineering or design).

## **2 — Dissemination and technical assistance**

- 2.1 Travelling presentations and exhibits -- demonstrating "how to" apply available information and results of earthquake research to local governments and agencies.
- 2.2 Conducting intensive "on-site workshops" on a limited range of technical earthquake topics -- including how to apply results of NSF earthquake engineering research.
- 2.3 Presentations and demonstrations to local governments and agencies on how to utilize ABAG's land capability analysis in planning.

## **3 — Public information and education**

- 3.1 Media presentations to raise public awareness -- for example a television series on earthquake preparedness measures that can be taken by individuals and families.



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- 3.2 Durable plastic information cards and other mailings (or inclusion in utility bills) that inform people of emergency steps that can be taken before, during, and after an earthquake -- including emergency equipment, food, water, batteries, and other supplies.
- 3.3 Workshops for the media on their roles in earthquake preparedness and response.

## **4 — Legislative**

- 4.1 Draft model State legislation for implementing and enforcing seismic safety elements.
- 4.2 Draft model State legislation for developing earthquake warning systems.
- 4.3 Draft model State legislation for the development of emergency response capabilities -- including communications systems, emergency facilities, other tools and techniques.

## About the Association

ABAG is owned and operated by the local governments of the San Francisco Bay Area. It was established in 1961 to meet regional problems through the cooperative action of its member cities and counties. At present, 85 of 93 cities and 7 of 9 counties in the Bay Area are members. Twenty-five special districts, regional agencies and other government agencies are non-voting, cooperating members. ABAG serves an area of about 7 thousand square miles and nearly 5 million citizens.

ABAG is the areawide comprehensive planning agency for the Bay Area. Its approved Regional Plan provides a policy guide for planning of the region's:

- air quality
- airport systems
- community development
- comprehensive health services
- criminal justice
- employment
- growth management
- housing
- human services
- ocean coastline use
- open space
- seaports
- seismic safety
- solid waste management
- transportation
- water resources
- water quality

Activities include developing long-range growth policies, adopting a regional housing element, initiating community development goals and policies, and implementing a plan to preserve natural resources and manage lands in the Bay Area. ABAG also keeps citizens informed and encourages citizen participation in regional planning.

A major program during 1976 and 1977 will be the development by ABAG and other agencies of areawide air and water quality management plans for the Bay Area. The \$4.3 million effort is funded by the Environmental Protection Agency under Section 208 of the Federal Water Pollution Control Act Amendments of 1972.

ABAG also works jointly with other regional agencies such as the Metropolitan Transportation Commission, the Bay Area Air Pollution Control District, the Bay Area Comprehensive Health Planning Council, the Bay Area Sewage Services Agency and the Coastal Zone Conservation Commissions.

ABAG policy is set by the General Assembly, which meets at least once a year. Delegates are elected officials from member cities and counties.

ABAG's Executive Board of 36 meets monthly to make operating decisions, consider grant applications, control expenditures and recommend major policies to the General Assembly. Executive Board members are appointed by County Boards of Supervisors, Mayors and City Councils. Membership on the Executive Board reflects the population size of each county.

The work of ABAG's staff of 110 is directed by the Executive Board and by policy committees that deal with various program and interest areas.

ABAG is the Federally designated areawide clearinghouse for the Bay Area. Reviews and comments on applications from local jurisdictions cover more than 150 different Federal assistance programs. During 1975, ABAG reviewed more than 1,000 local applications totalling \$555 million in Federal funds and \$748 million in total funds.

Development proposals with potentially significant effects on the region may be examined in their early stages -- before Federal grant applications are made -- by ABAG's system of hearing panels.

The preparation of this booklet was funded in part through a grant from the "Research Applied to National Needs" program of the National Science Foundation.